Listing of the Claims

1. (Currently Amended)   A diagnostic image processing system comprising:

a parameter extraction processor (46) for extracting selected parameter values from a diagnostic image representation or from data for generating the diagnostic image;

a subject database (10) that stores the image representation and the extracted parameter values in association with at least a patient identity and a date, the database being updated each time the subject is imaged; and,

a report formatting means (60) for formatting the extracted parameter values from a plurality of diagnostic images generated at different times into a report.

2. (Currently Amended)   The system as set forth in claim 1, further including:

a user interface (36) with which a user selects a region of interest of at least a baseline one of the diagnostic images from which the parameter values are to be extracted.

3. (Currently Amended)   The system as set forth in claim 2, wherein the parameter extraction processor (46) extracts the values from the selected region of interest.

4. (Currently Amended)   The system as set forth in claim 3, further including:

an image registration processor (54) that aligns and scales the diagnostic images.

5. (Currently Amended)   The system as set forth in claim 2, further including:

a database searching means (50) for searching the subject database (10) for other diagnostic images of the selected region of interest of the subject, the parameter extraction processor (46) extracting the selected parameter values from the other diagnostic images of the selected region.

6. (Currently Amended)   The system as set forth in claim 5, wherein the report formatting means (60) includes a graphing means (64) for plotting change of a selected parameter versus time.

7. (Currently Amended)   The system as set forth in claim 5, further including a cinè image sequence generating means (100) for converting the selected region of interest of the diagnostic images into a temporally scaled sequence of cinè images.

8. (Currently Amended)   A method of diagnostic image processing comprising:

displaying a diagnostic image representation;

selecting a region of interest on the display;

extracting selected parameter values from the selected region;

storing the image representation along with the extracted parameter values in association with at least a subject identity and a date in a database (10);

formatting the extracted parameter values from a plurality of diagnostic images into a report.

9. (Currently Amended)   The method as set forth in claim 8, further including:

generating image representations including the region of interest of the subject at different dates; and,

storing the generated image representations in the subject database (10) catalogued by at least subject identity and date.

10. (Currently Amended)   The method as set forth in claim 8, further including:

searching the subject database (10) for additional diagnostic images of the selected region of interest.

11. (Original)   The method as set forth in claim 10, further including:

registering diagnostic images retrieved from the database with the selected region of interest.

12. (Original)   The method as set forth in claim 11, further including:

displaying the diagnostic images sequentially by date.

13. (Original)   The method as set forth in claim 12, further including:

interpolating the diagnostic images such that the sequentially displayed images are displayed with a linear time scale.

14. (Original)   The method as set forth in claim 11, further including:

extracting the selected parameter values from the plurality of diagnostic images.

15. (Original)   The method as set forth in claim 14, wherein the formatting step includes:

presenting the selected parameter values in tabular format by date.

16. (Original)   The method as set forth in claim 15, wherein the formatting step includes:

presenting the selected parameter values in a graph versus time with a pre-selected time scale.

17. (Original)   The method as set forth in claim 14, wherein the parameter values include at least one of:

a volume of the selected region;

a blood flow through the selected region;

an average density in the selected region;

diffusion coefficients of the selected region;

fractional diffusion anisotropy values in the selected region; and,

spectroscopic peak intensities in the selected region.

18. (Original)   A method of diagnostic imaging comprising:

creating an image representation of a portion of a subject;

selecting a region of the image representation for further study;

storing the image representation in a subject database cataloged by at least a subject identity and a date of scan;

extracting selected parameter values from the image representation and storing them in the subject database;

creating at least one other image representation of the portion of the subject on a subsequent date;

storing the at least one other image representation and other additional values of interest in the subject database;

spatially registering the image representation and the at least one other image representation;

displaying the image representations to show a time progression of the region.

19. (Original)   The method as set forth in claim 18, further including:

presenting the selected parameter values in one of graphical and tabular form showing a progression of the parameter values over time.

20. (Original)   The method as set forth in claim 18, wherein the image representation and the at least one other image representation are produced by different modalities of diagnostic imaging and registered by aligning structures identifiable in all modalities involved, and further including:

enhancing the resolution of the image representations by utilizing complementary characteristics of the modalities involved.